Cost-benefit analysis in regulation - corner-stones of a reality-based regulatory policy

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I. Introduction

The global financial crisis of 2007-2010 has generated calls for *conceptual* re-examination of regulatory policy, its attitude towards the efficiency of markets and the role of legal, social, and ethical norms in a market economy.[1] It has prompted policymakers and scholars to re-examine the assumptions underlying a variety of the legal arena's current neoclassical economic theories and the goals of regulatory agendas.[2] It has also been claimed that a great number of today's economic and environmental problems reflect *regulatory failures* and *inadequate regulatory oversight*.[3]

Legal scholars specializing in various fields of regulation have echoed the assumption that domestic regulatory policies must incorporate more of the

1 What went Wrong with Economics, Economist, July 18, 2009, 11-12; see also JOHN CASSIDY, How Markets Fail. The Logic of Economic Calamities, New York 2009.

2 The Other-Worldly Philosophers, Economist, July 18, 2009, 65-67; GEORGE A. AKERLOF/ROBERT J. SHILLER, Animal Spirits. How human psychology drives the economy and why it matters for global capitalism, Princeton 2009; ROGER ZÄCH, Gefährdung des wirtschaftlichen Wohlstands durch ergebnisorientierte Wirtschaftsordnung, Kommentar, Wirtschaft und Wettbewerb 2010, 139.

3 RAGHURAM G. RAJAN, Fault Lines. How hidden fractures still threaten the world economy, Princeton 2010, 154-182; see also e.g. CHRISTINE A. VARNEY, Vigorous Antitrust Enforcement in this Challenging Era, May 12, 2009, 4-5, http://www.justice.gov/atr/public/speeches/2457 77.htm.; see also the discussions of the World Economic Forum in Davos 2011: PHILIPP HILDEBRAND, President of the Swiss National Bank.

complexity which underlies the industrial economy.[4] One debate that has remained latent over the last half-dozen years concerns the role of *cost-benefit analysis* as a technique to render regulatory policy apparently more neutral and objective. Although conventional wisdom holds that cost-benefit analysis provides for a more 'scientific' approach to legal policy, Professor DOUGLAS A. KYSAR has recently written that cost-benefit analysis is "a policy-making approach that achieves its appearance of case-specific rationality at the price of insensitivity to context and to longer-term, systemic rationality." According to Kysar, "policymakers cannot be content with the local equilibriums identified by conventional cost-benefit analyses but instead must aim to alter – over time and in rather dramatic macroscale ways – the economic and technological forces that combine to structure any given policy context with its microscale snapshot that seems to admit of only one 'optimal' solution."[5] Professors RICHARD L. REVESZ and MICHAEL A. LIVERMORE echo this sentiment, with a slightly different emphasis, writing that "cost-benefit analysis is […] biased against regulation." They ascribe "the roots of the antiregulatory bias within cost-benefit analysis" to "historical rather than conceptual" reasons and contend that they stem from "the shunning of cost-benefit analysis by proregulatory interests […] which had the unintended effect of leaving antiregulatory interests free to shape the use of the technique toward their purposes."[6] Numerous other scholars have engaged in the debate over the proper role of regulation in the economy arguing in favor and against the application of cost-benefit analysis on a variety of different grounds.[7]

Outside of the academy, cost-benefit analysis is often used by governments to evaluate the desirability of a new regulatory framework or a given intervention in the free play of market forces. It is heavily used in government today when deciding on whether a new business regulation should be introduced, a new road should be built, or a new drug should be offered through the state healthcare system. What is more, the assumption that the principle of cost-benefit analysis allows us to analyze what might happen under varying policies and conditions with respect to social or economic welfare may seem so intuitive that for the most part scholars have failed to test the application of the welfare-maximization approach against the ques-

4 Cf. DOUGLAS A. KYSAR, The Jurisprudence of Experimental Law and Economics, 163 J. Institutional & Theoretical Econ. 2007, 187.

5 DOUGLAS A. KYSAR, Regulating from Nowhere. Environmental Law and the Search for Objectivity X, New Haven 2010.

6 RICHARD A. REVESZ/MICHAEL A. LIVERMORE, Retaking Rationality. How Cost-Benefit Analysis Can Better Protect the Environment and Our Health, Oxford 2008, 10.

7 For a recent sustained critique, arguing that cost-benefit analysis is fundamentally flawed, see FRANK ACKERMAN/LISA HINZERLING, Priceless: On Knowing the Price of Everything and the Value of Nothing, New York/London 2005.

tion of whether it provides for *useful* simplifications or *over*simplifications. In the context of the environmental, health and safety laws this has been recognized – because a value must be put on human life or on the environment: The cost-benefit principle requires us for example to install a guardrail on a dangerous stretch of mountain road if the dollar cost of doing so is less than the implicit *dollar value* of the injuries, deaths, and property damage thus prevented.[8]

This argument yields important implications for the study of the relation of cost-benefit analysis to regulation in general. This contribution argues that the cost-benefit analysis principle may indeed create useful simplifications of the economy that allow us to analyze a vast number of market conditions, thus helping us to avoid devising the most realistic models that detail all individuals and their whimsical behavior, and all institutions, models that would be hopelessly complex and of little value in analysis. The cost-benefit principle has been used as a *method* for analyzing markets,[9] as an apparently neutral technical apparatus for studying the relationship between competition and market outcomes and plays a pervasive role in relevant legal discourse.[10] It integrates the distinctive grammar of economics into the law, producing a richer conception of appropriate legal argument. However, we argue that the application of the wealth-maximization principle to regulation is not actually capable of pursuing an 'economically *correct* regulatory policy' that unreservedly allows us to investigate in economic relationships thoroughly, and that conclusively enables regulators to reduce welfare costs through decision errors by distinguishing better between welfare enhancing and welfare diminishing behavior.

To claim that the wealth-maximization principle is based on a 'scientific' view of the economy and that it therefore always generates *better* outcomes or results or provides for a *more objective* regulatory framework is to fall victim to the illusion that through the application of a single value framework to reality, such as rational choice or welfarism, the necessity of making value judgments can be avoided.[11] Rather, *scientific theory* points to the fact that

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8 ROBERT H. FRANK, Why Is Cost-Benefit Analysis So Controversial?, 29 J. Legal Stud. (2000), 913.

9 See STEVEN M. TELES, The rise of the conservative legal movement: The battle for control of the law (2008), 91.

10 BRUCE A. ACKERMANN, Law, Economics, and the Problem of Legal Culture, 6 Duke L.J. (1986) 929, 929-947.

11 ADRIAN KÜNZLER, Effizienz oder Wettbewerbsfreiheit? Zur Frage nach den Aufgaben des Rechts gegen private Wettbewerbsbeschränkungen, Tübingen 2008; see also WALTER OTT, Der Rechtspositivismus. Kritische Würdigung auf der Grundlage eines juristischen Pragmatismus, Berlin 1992; Efficiency and Beyond, Economist, July 18, 2009, 68-69; MAX WEBER, Die "Objektivität" sozialwissenschaftlicher und sozialpolitischer Erkenntnis, Archiv für Sozialwissenschaften und Sozialpolitik, 1904, 148-149; ALOIS RIKLIN, Ein überraschend junger Streit. Über vermeidbare und unvermeidbare Werturteile, 40 Die Neue

the economy and the legal decision-making environment may be too complex to support the level of purity and clarity that cost-benefit analysis alone is able to achieve with respect to the ultimate interpretation of results. Its exclusive application ignores the facts that individual preferences are necessarily plural, that market outcomes are necessarily uncertain, and that legal judgments are necessarily pragmatic. Within the context of realistic legal decision tasks, any attempt to replicate such research methodology may fail to capture what is distinctively complex about the assigned tasks; vested interests have to be confronted, conflicting aims have to be reconciled. Above all, the existence of 'complex organized phenomena' has to be acknowledged, as has the fact that effective government is a matter of getting the balance right between autonomy and coordination. Hence, policymakers and courts need to embrace the fact that cost-benefit analyses are based on pre-scientific decisions, or, are *axiomatic* in character. Such analyses may not be judged – as is done in the natural or social sciences – on their 'truth', but on their effectiveness in terms of the conclusions they permit to be drawn. Such a *pragmatic jurisprudential framework* presupposes a debate as to whether the consequences of a particular method are *desirable or undesirable*. It sometimes offers a better conceptual fit for scientific approaches in law than the purely positivistic framework of social science and, at the same time, allows for careful consideration of *constitutional rights* and the idea that the *preferences of the citizens* should be the relevant normative criteria for appropriate decisions about the objectives of regulatory policy.

II. Implications of Cost-Benefit Analysis

The rigorous assumption from neoclassical welfare economics that governmental interventions in individual preferences are only justified when they *demonstrably* have a welfare-enhancing effect is based on the implicit view that "what we don't know won't hurt us".[12] However, in situations of uncertainty, this might mean to *overlook unintended consequences*. The Food and Drug Administration (FDA) for example has made its risk-assessment burden lighter by suggesting that novel scientific processes in the case of cloning, genetic modification and nanoengineering are not in themselves cause for regulatory scrutiny or distinction. Rather, they should only become relevant if they lead to demonstrated differences in the physical or compositional characteristics of end products as compared to conventional

Ordnung (1986), 16; MATTHIAS MAHLMANN, Rechtsphilosophie und Rechtstheorie, Baden-Baden 2010, 144-147.

12 KYSAR (note 5), 91; see also REVESZ/LIVERMORE (note 6), 1.

counterparts.[13] Introducing nanomaterials or genetically modified organisms widely into field environments however means ignoring the maybe *irreversible nature* of such actions.[14] On the other hand, the proposition from advocates of neoclassical welfare economics to simply price and incorporate the value of this precaution into the welfare-economic optimization calculus so that cost-benefit analysis can continue in the usual way[15] would "invite exclusionary, technocratic decision making in the face of grave uncertain collective choices, precisely the context that […] instead requires inclusiveness, transparency, and candid acknowledgment that ethical choices are being undertaken."[16] The veil of apparent scientific rigor, therefore, has to be lifted and the blunt reality of indeterminacy needs to be addressed. In situations of uncertainty, "the resulting permissive approach [that] comports well with the tendency of liberal market democracies to permit private action unless and until a public justification has been demonstrated [entails the problem that] this predisposition has been presented in a scientific vernacular, as an assumption about the empirical tendencies of nascent technologies, rather than as what it properly is – a preference for *distributing the burden of uncertainty* in a particular way, according to political values."[17] It is worth noting that such a permissive approach worked as long as human actions did not have irreversible consequences for mankind or the environment or no far- or even globally-reaching effects on the economy. Today, both in view of the environment and in light of the recent financial crisis, this is no longer the case.

III. Regulating Complexity

The view that analysts can maintain the classical scientific tradition, and refuse to accommodate the implications of complexity theory in the very scientific models that are used to generate ranges of costs and benefits, is hardly tenable if *recent epistemological principles* are given appropriate attention. In economic and social sciences, it is recognized today that a

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13 See DOUGLAS A. KYSAR, Preferences for Processes: The Process/Product Distinction and the Regulation of Consumer Choice, 118 Harv. L. Rev. (2004), 525 with further references.

14 KENNETH J. ARROW/ANTHONY C. FISHER, Environmental Preservation, Uncertainty, and Irreversibility, 88 Q. J. Econ. (1974), 312, 317 argue that "[…] if we are uncertain about the payoff to investment in development, we should err on the side of underinvestment, rather than overinvestment, since development is irreversible. Given an ability to learn from experience, underinvestment can be remedied […] whereas mistaken overinvestment cannot, the consequences persisting in effect for all time."

15 ARROW/FISHER (note 14), 319; see also REVESZ/LIVERMORE (note 6), 16-19.

16 KYSAR (note 5), 92; for further critique of the 'unprecautionary principle', see, WENDY E. WAGNER, The Precautionary Principle and Chemical Regulation in the U.S., 6 Hum. & Ecological Risk Assessment (2000), 459, 466-68; MAHLMANN (note 11), 218.

17 KYSAR (note 5), 91 (emphasis added).

distinction has to be made between calculable *risk* – risk to which a numerical probability can be assigned, and of which the likelihood, direction, and magnitude by which actual outcomes may deviate from the estimated (mean) risk can also be estimated – and *uncertainty*, to which a numerical probability and distribution cannot be assigned with any confidence that it is correct.[18] For example, in his essay, "The General Theory of Employment", John Maynard Keynes explained uncertainty as follows:

> "By 'uncertain' knowledge, let me explain, I do not mean merely to distinguish what is known for certain from what is only probable. The game of roulette is not subject, in this sense, to uncertainty […]. The sense in which I am using the term is that in which the prospect of a European war is uncertain, or the price of copper and the rate of interest twenty years hence, or the obsolescence of a new invention, or the position of private wealth-owners in the social system in 1970. About these matters there is no scientific basis on which to form any calculable probability whatever. We simply do not know."[19]

This distinction is closely intertwined with the notion of *simple* and *complex phenomena* which had been discovered by the mathematician Warren Weaver and the economist Friedrich A. von Hayek in the course of the last century:[20]

Simple phenomena consist of few variables which stand in deterministic (fixed) relations with one another. The most extreme case involves only two variables, of which the state or the change of one is the cause of the state or the change of the other. Consequently, as long as one knows the state or the change of the causal variable, it is possible to derive a prognosis for the effect variable. Further, if the causal variables are controllable, then the effect variables can also be controlled. So the first variable depends entirely on the second, and not on (a large number of) other factors. Accordingly, the behavior of the first variable can be described with a sufficient degree of precision simply by considering its dependency on the second variable, ignoring the more trivial effects of other factors. Simple relations of this kind are found mainly in the classical natural sciences of the 17th to 20th centuries, e.g. in Newton's laws of mechanics.

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18 The distinction is explicit in JOHN M. KEYNES, The General Theory of Employment, 51 Q. J. Econ. (1937), 209; see also FRANK H. KNIGHT, Risk, Uncertainty, and Profit (1921),19-20. The term "risk", as it is usually used in economics refers simply to the probability of some event's occurring, rather than, as is common in ordinary language, referring to the probability times the consequence (i.e., the expected cost), as when one says that e.g. mountain climbing is risky.

19 KEYNES (note 18), 213-214.

20 WARREN WEAVER, Wirtschaft und Komplexität, in 18 ORDO. Jahrbuch für die Ordnung von Wirtschaft und Gesellschaft (1967), 163.

In contrast to that, *complex phenomena* consist of a large number of variables which relate to one another in a 'systematic' way. These relations are not invariant but can change in space and time. The character of such phenomena depends not only upon the attributes and the relative frequency of the individual component elements, but also upon the way in which the individual elements are interconnected. *Complexity* is a particular characteristic of the phenomena studied in economics and the social sciences, but also in such disciplines as biology, medicine or psychology. To derive specific predictions about certain events in these subject areas, one needs complete information on every single element of the phenomenon in question. Thus, the ability to make specific and concrete statements about such phenomena would presuppose an unattainable amount of knowledge about singular conditions. Without this knowledge it is only possible to make what are known as *pattern predictions*; that is to say, what can be learned relates only to certain general attributes and to the short- and medium-term direction of the operative processes, at best. Nevertheless, this knowledge can still be useful in some cases for influencing these process attributes and the direction of the process. On the other hand, it is impossible to recognize the individual stages of these processes in advance, let alone their ultimate outcome. Furthermore, it is impossible to obtain prognostic knowledge of the kind that would allow the prediction of specific occurrences.

In current research and applied practice it is common for such complex phenomena to be treated *as if* they were simple phenomena. This is partly because, today, the knowledge of simple fixed relations and their application for prognosis and control has become the goal of all disciplines and their hallmark of quality. A 'science' that cannot attain this standard 'yet' is deemed to be backward. These 'backward' sciences attempt to align their methods, their interpretation of results and the use of their findings for prognosis and control with conventions from the natural sciences.[21] Keynes highlighted this phenomenon with respect to maintaining adherence to the optimization-policy framework:

> "Nevertheless, the necessity for action and for decision compels us as practical men to do our best to overlook this awkward fact and to behave exactly as we should if we had behind us a good Benthamite calculation of a series of prospective advantages and disadvantages,

[21] On the reductionist view of neoclassical welfare economics, see, BRUCE A. ACKERMAN, Law, Economics, and the Problem of Legal Culture, 6 Duke L.J. (1986), 929, 940-941; FRANZ WIEACKER, Vom Nutzen und Nachteil des Szientismus in der Rechtswissenschaft, in: Dieter Simon (ed.), Theorie der Rechtsgewinnung Ausgewählte Schriften, Band 2, Frankfurt a.M.1983, 121; MAHLMANN (note 11), 144-147.

> each multiplied by its appropriate probability, waiting to be summed."[22]

But when it comes to solving complex problems, the relevance of these methods is dubious: in the real world, ascertaining all the necessary data to capture a complex phenomenon is a difficulty that is virtually insuperable. Consequently, if one wants to consider more recent epistemological principles in regulatory policy, one has to pay due regard to the fact that in the case of many of the phenomena subject to risk, environmental, health and safety regulation, decision makers should abandon the pretence of actually attempting to locate and pursue an 'optimal' outcome. As these involve the interdependent actions of millions of elements, whose structures are *not constant* but *variable* in space and time,[23] decisionmakers "should present for collective consideration an unalloyed depiction of what is, and is not, known about the possible consequences of human action, so that the political community can consider directly whether it wants to entertain […] irreversible […] harm as part of its unique legacy."[24] In other words, if the implications of complexity theory are accommodated properly into the scientific models that are used to assess costs and benefits, such an accommodation will often mean that scientists are only able to offer a series of *qualitatively described scenarios* that might flow from policy choices, without probability estimates assigned to them, rather than *quantitatively* depicted but ultimately unhelpful cost-benefit ranges.[25]

IV. Assigning the Burden of Proof According to Real-World Conditions

1. Balancing of Interests and the Principle of Proportionality

The *assignment of an implicit burden of proof* to regulatory agencies "might be appropriate within the ivory towers of the university, where scholars aim to bolster the scientific credentials of welfare economics by portraying it as the 'objective implementation of benefit-cost analysis, based on established economic theory and empirical research'. In the real world of policy making, however, decisions [often] must be made in advance of comprehensive knowledge."[26]

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22 KEYNES (note 18), 214.
23 WEAVER (note 20), 163.
24 KYSAR (note 5), 97-98.
25 CLIVE L. SPASH, Greenhouse Economics: Value and Ethics (2002), 115, 127; KYSAR (note 5), 97.
26 KYSAR (note 5), 214-215.

As shown above, recent epistemological principles such as uncertainty and complexity theory offer possible answers to resolving these problems: Regulatory agencies should, in cases of uncertainty, adopt measures that are *proportionate* to the threat perceived and that are open to revision as knowledge develops.[27] For the reasons set out, they should not be hampered by a *default assumption* against any kind of government regulation in advance of complete scientific demonstration of harm. Consequently, *in cases of uncertainty*, cost-benefit analysis has to be accompanied by a *balancing of interests* which presupposes 1) identification of potentially negative effects resulting from a phenomenon, and 2) a scientific evaluation of the risk which because of the insufficiency of the data, its inconclusive or imprecise nature, makes it impossible to determine with sufficient certainty the risk in question. When an activity raises threats of harm to human health or the environment, precautionary measures should be taken *even if some cause-and-effect relationships are not fully established scientifically*. This is also true with respect to certain financial market operators: as the financial crisis of 2007-2010 has shown, there was an ever-present threat of breakdown of the economy which seriously endangered millions of people's social and economic welfare.

2. Measures Resulting from Reliance on the Proportionality Principle

In the kind of situations described, the question remains of *how* decision-makers have to respond. Above all, they have to decide *whether or not to act*. The appropriate response in a given situation is the result of a political decision, a function of the risk level that is 'acceptable' to the society on which the risk is imposed. For regulatory agencies this problem becomes more manageable when, as Professor E. Donald Elliott has suggested, viewed diachronically (over time) rather than analytically assessing what relative weights should properly be given to facts (risk) and values (precaution) synchronically and in the abstract.[28] Thus the practical question that every regulator in such situations must ask is:

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[27] ADRIAN KÜNZLER, Economic Content of Competition Law: In Defense of a Reality-Based Approach to Competition Policy, ASCOLA Competition Law Series 2011 (forthcoming 2011); COMMISSION OF THE EUROPEAN COMMUNITIES, Communication from the commission on the precautionary principle (2000), http://ec.europa.eu/dgs/ health_consumer /library/pub/pub07_en.pdf. As examples the deregulation of formerly strictly regulated industry sectors such as telecommunication, mail and railroad services can be mentioned. On the political agenda in Switzerland is the deregulation of the agricultural markets, see, Neue Zürcher Zeitung, Jan. 27, 2011, 15 (RUDOLF MINSCH, Öffnung des Agrarmarktes ist im Gesamtinteresse des Landes and MATTHIAS BINSWANGER, Nicht die Schweizer Bauern aufs Spiel setzen).

[28] E. DONALD ELLIOTT, Global Climate Change and Regulatory Uncertainty 9 Ariz. J. Int'l Comp. L. (1992), 259, 261.

> "Shall I act to address this particular problem now, basing my decision on what is currently known (or, more accurately, believed to be known)? Or shall I instead defer action until a later date, when more may be known, but at the cost of what occurs in the meantime?"[29]

Viewed from this practical, diachronic perspective – which is the situation that a regulator actually faces in trying to decide on concrete actions – the problem of the relative weights to be assigned to fact (risk) and to value (precaution) may become much more tractable:

> "As a matter of common sense, a regulator may be well advised to wait until later to act if, but only if, (a) it seems unlikely that much preventable harm will occur in the meantime, but (b) it also seems likely that enough useful information will be developed in the meantime so that making a better decision in the future will be substantially less difficult than it is today."[30]

However, as far as financial market regulation is concerned the complexity and inherent uncertainty of the economy will often require market regulators – for precautionary reasons – to *act*.

3. Nature of the Action Ultimately Taken

With respect to maximizing overall welfare, the implicit assumption by cost-benefit analysis that the inevitable uncertainty described must be construed *against* government interventions is based on the grounds that according to the purely price-based concept of 'social or economic welfare' of neoclassical welfare-economics 'in case of doubt' overall well-being cannot be enhanced by interfering with individual preferences.

However, a *balancing of interests* in such cases – as opposed to cost-benefit analysis – involves making value-judgments which affect legally protected interests. And by no means must these value-judgments necessarily correspond to the values of welfare economics. Rather, such value-judgments might be prescribed in the constitution and in a particular statute by the legislator. In case of doubt, these must be respected and applied to the concrete case when the balancing test is carried out.[31] Moreover, in cases of doubt, a 'balancing of interests' may add a *second* and a *third dimension* to the linear, one-dimensional decisionmaking system that is assumed by an

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[29] ORTWIN RENN/E. DONALD ELLIOTT, Chemical Regulation in the United States and Europe, in: The Reality of Precaution: Comparing Risk Regulation in the United States and Europe (forthcoming 2011).

[30] RENN/ELLIOTT (note 29).

[31] A notion that has been referred to as 'environmental constitutionalism', see, KYSAR (note 5), 229-254.

approach according to which economic conditions are translated predictably into economic conclusions that call for prescribed economic measures, and environmental conditions can be translated predictably into environmental conclusions that call for environmental measures, and so forth.[32] And although such a 'balancing of interests' is an expression of the general principle of proportionality, which is particularly significant in relation to the restriction of basic rights in constitutional law, these kinds of interference with the preferences of those concerned are widely acknowledged in 'reality-based economics'.[33]

One of the main aims of this kind of governmental regulation is to bring interventions in individual preferences in line with the goal of reducing 'false positives' and 'false negatives', i.e. with the goal of maximizing macrosocietal welfare. At the same time, it allows for decision-making criteria which do justice to *real-world* conditions.[34]

V. Concluding Remarks

This contribution is not a petition against cost-benefit analysis but a plea for the application of *reality-based* economic concepts and analysis methods. The underlying hypothesis of cost-benefit analysis that economic welfare can only be measured on the scale of 'economic efficiency', is not unreservedly tenable. And it is reasonably clear that this no longer reflects the 'majority view' within economics, either. In fact, it is now well recognized in the discipline of economics that social and economic welfare is not conceptually limited to material values, that outcomes are not always predictable, and that the states of equilibrium studied by the neoclassical economists sometimes bear little resemblance to the complexity and uncertainty of reality.

However, once it is borne in mind that a more 'reality-based approach' resorts to a variety of epistemological principles, on closer examination there is far less of a discrepancy between a reality-based regulatory policy and scientific advances than when neoclassical welfare economics is taken as an absolute standard. As stated at the outset, 'reality-based economics' is not as unified as neoclassical welfare economics, but that is an *advantage* rather than a disadvantage, because it means that different theories can be used to explain *different aspects* of the subject matter.

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32 KYSAR (note 5), 71.

33 See COLIN F. CAMERER/SAMUEL ISSACHAROFF/GEORGE LOEWENSTEIN/TED O'DONOGHUE/MATTHEW RABIN, Regulation for Conservatives: Behavioral Economics and the Case for 'Asymmetric Paternalism', 151 U. Pa. L. Rev. (2003), 1211, 1211-1212.

34 Id., 1221; CHRISTINE JOLLS, Governing America: The Emergence of Behavioral Law and Economics, Max Weber Lecture Series, 2010, 1-4, http://www.law.yale.edu/documents/pdf/Faculty/Jolls_TheEmergenceofBehavioralLawandEconomics1.pdf.